WHAT IS CLAIMED IS:

1. A method of extracting thermal energy from a rock formation, the method comprising the steps of:

drilling a plurality of wells to a depth sufficient to allow development of at least one fracture joint cloud reservoir;

hydraulically fracturing at least one of the plurality of wells;

dilating the at least one fracture joint cloud reservoir;

forcing cooled water under high pressure and volume into at least one of the plurality of wells to charge the reservoir;

alternately opening and closing a plurality of discharge control valves and a plurality of injection control valves to provide continuous flow from the plurality of wells and permit discharge from the reservoir;

removing heated water from the wells; and

passing the heated water to a heat exchanger.

2. The method of claim 1 wherein the step of drilling includes the step of hydraulic drilling.

3. The method of claim 2, wherein the step of hydraulic drilling includes particle jet drilling.

4. The method of claim 1, wherein a volume of the at least one fracture joint cloud reservoir is increased through simultaneous mechanical and thermal cycling.

5. The method of claim 1, wherein heat values in the at least one fracture joint cloud reservoir are maintained through mechanical and thermal cycling of the reservoir rock.

6. The method of claim 5, wherein the volume of heat that may be swept in the at least one fracture joint cloud reservoir is increased through thermal and mechanically cycling reservoir rock.

7. The method of claim 1 wherein the step of charging and discharging of the system is further includes the step of timing the charging and discharging to produce a sequence of cycles with steady state load following production cycles generated while still inducing coincidental thermal mechanical cycling that results in brecciation and spallation of the reservoir rock.

8. The method of claim 7 wherein the method of heat production is further facilitated by utilizing at least two wells wherein an injection well injects periodically

at different injection rates so that the rate is greater than the continuous production rate produced from the production well such that the reservoirs alternately expanded and then allowed to contract in order to generate the combined thermal and mechanical stresses necessary to generate in situ reservoir brecciation while the reservoir is being produced at a continuous rate.

9. The method of claim 7 wherein the method is further facilitated by utilizing at least three wells.

10. A method of completing geothermal production wells including the steps of

drilling a plurality of wells from at least one wellhead through a plurality of earthen formations;

utilizing a first type of drill bit through first upper earthen formations for the generation of the well bore;

utilizing a particle jet drilling bit for bore hole creation within a hot dry rock region disposed beneath the first earthen region;

terminating a first plurality of bore holes in a first Precambrian formation to a depth of sufficient temperature to allow the development of one or more discreet formation fracture joint clouds which are oriented vertically or horizontally as determined by the rock formation;

terminating a second of the plurality of bore holes into a lower region for creating a lower fracture joint cloud generally horizontally disposed beneath the first cloud; and

hydraulically fracturing each cloud to produce a reservoir volume of dilated joints in the formation by pumping at pressures in excess of the joint dilation pressure and the formation break down pressure.

11. The method as set forth in claim 10 and further including terminating a third bore hold beneath the regions of termination of the first and second bore holes.

12. The method as set forth in claim 10 wherein the step of fracturing includes imparting a pressurization cycle to charge the reservoir followed by the depressurization of the reservoir to flush the heated water from the dilated joints that produce the heat absorbed by the water during the pressurization and depressurization cycle.

13. The method as set forth in claim 12 and further including repeating the process of charging and depressurizing each cloud to develop an aggregate of a plurality of discreet reservoirs that will accept pressurized water to charge the reservoir during dilating the joints allowing the water to travel into the reservoir to be heated and then expelled from the reservoir when the heated water pressure is lowered in the well bore from a wellhead.

14. The method of claim 13 including the step of continuously producing heated water by timing the pressure cycling of the well bore to provide one well being injected into at twice the rate the well is reversed flowed.

15. The method of claim 14 and further including routing cooled well bore fluid back down the well bore through a control valve to an injection pump.

16. The method of claim 14 and further including discharging cooled well bore fluid from the heat exchanger to a surface reservoir pit.

17. The method of claim 1 wherein the step of fracturing comprises the step of dilating a plurality of material joints in the formation.

18. The method of claim 1 wherein the step of drilling includes drilling an upper well portion with a rotary mechanical drill bit.

19. The method of claim 18, where the rotary-mechanical drill bit comprises PJARMD methodology.

20. A method of drilling deep well bores from a wellhead into Precambrian and Hadean Era crystalline rock formations for accessing thermal energy therein comprising the steps of:

establishing a bore hole drilling system from the wellhead with at least a first and a second type of drilling methodology, the first methodology including rotary-mechanical drilling and a second methodology including hydraulic drilling;

drilling a first bore hole section from the wellhead and into a first formation utilizing the first methodology of the rotary-mechanical drilling;

drilling a second bore hole section beneath the first bore hole section into the crystalline rock formation with the second drilling methodology of hydraulic drilling; and

exposing the thermal energy within the crystalline rock for the access thereto.

21. The method of claim 20, wherein the hydraulic drilling includes particle jet drilling.

22. The method of claim 21, wherein the particle jet drilling methodology includes the process of entraining discreet high density solid particles in a drilling fluid for cutting the formation.

23. The method of claim 22, wherein the formation cutting uses impulse energy imparted to the formation by momentum transmitted to the entrained particles by the jetting fluid in order to abrade and crack the formation.

24. The method of claim 23, and further including removing the abraded formation at a rapid rate through the flow of fluid therearound.

25. The method of claim 2 1 and further including completing the well bore to access a thermal energy reservoir in the formation through the steps of dilating a group ofjoints to form the reservoir; alternating charging and discharging the group of joints with a fluid in order to dilate the reservoir and causing the fluid to pass into and then subsequently flow out of the reservoir.

26. The method of claim 25 and further including the cyclic inducement of simultaneous mechanical and thermal stress reversals on the reservoir rock causing the rock to continuously brecciate and therein exposing new reservoir rock surface (shear banding).

27. The method of claim 26 and further including the step of imparting multiple stress reversals to create continuous and incremental increase in high thermal

differential surface are and reservoir volume whereby the ability to continually sweep the heat from the rock formation in a manner that allows much great efficiency removing a greater amount of heat density available per unit volume is provided.

28. The method of claim 27 wherein the reservoir system comprises a single discreet reservoir that is independently cycled to produce a cyclical or periodic production.

29. The method of claim 28 wherein the reservoir system includes a set of multiple independent reservoirs that may be cycled in sequence so as to produce a continuous production flow that can be steady state and fluctuating.

30. A method of developing a high temperature hot dry rock geothermal reservoir for accessing geothermal heat energy therein and production therefrom, the method comprising the steps of:

establishing a bore hole drilling system with at least a first and second type of drilling methodology, the first methodology including rotary-mechanical drilling and a second methodology including hydraulic drilling;

drilling a first bore hole section utilizing the rotary-mechanical drilling;

drilling a second bore hole section beneath the first bore hole section into crystalline rock with hydraulic drilling methodology;

exposing the thermal energy within the crystalline rock for the access thereto;

fracturing the crystalline rock into a fracture cloud with at least some of the fractures in flow communication with the second bore hole section;

pumping bore hole fluid down the first and second boreholes to hydraulically expand the fractures; and

alternating the hydraulic expansion and contraction of the fracture cloud to generate coincidental thermal and mechanical cycling of hot dry rock formations and the periodic brecciating within the hot dry rock formation, whereby the brecciation serves the purpose of incrementally exposing new high thermal differential services on an incremental basis that will serve the purpose of maintain high temperature production in the hot dry rock formation.

31. The method as described in claim 30 wherein the hydraulic expansion is effected in an omni-directional manner both during the injection cycle and the production cycle for substantially increasing the surface area swept by the working fluid.

32. The method of claim 30, wherein the hydraulic drilling includes particle jet drilling.

33. The method of claim 32, wherein the particle jet drilling methodology includes the process of entraining discreet high density solid particles in a drilling fluid for cutting the formation.

34. The method of claim 33, wherein the formation cutting uses impulse energy imparted to the formation by momentum transmitted to the entrained particles by the jetting fluid in order to abrade and crack the formation.

35. The method of claim 34, and further including removing the abraded formation at a rapid rate through the flow of fluid therearound.

36. The method of claim 30 wherein the reservoir system comprises a single discreet reservoir that is independently cycled to produce a cyclical or periodic production.

37. The method of claim 30 wherein the reservoir system includes a set of multiple independent reservoirs that may be cycled in sequence so as to produce a continuous production flow that can be one of steady state and fluctuating.

38. The method as set forth in claim 30 and further including a single reservoir having multiple wells serving the purpose of simultaneous injection and production in a manner that the injection wells inject periodically at a rate that exceeds the production rate on the cycle basis in order to cyclically expand the reservoir and store energy in the form of elastic string while a production well continually produces at a steady or fluctuating rate.

39. The method as set forth in claim 38 wherein the reservoir are vertically stacked while remaining independent one from the other.

40. The method as set forth in claim 38 wherein the reservoir are generally horizontally arranged while remaining independently isolated one from the other.

41. A method of developing geothermal reservoirs in hot dry rock formations, the method including the steps of:

establishing a bore hole drilling system with at least a first and second type of drilling methodology, the first methodology including rotary-mechanical drilling and a second methodology including hydraulic drilling;

drilling a first bore hole section utilizing the rotary-mechanical drilling;

drilling a second bore hole section beneath the first bore hole section into crystalline rock with hydraulic drilling methodology;

exposing the thermal energy within the crystalline rock for the access to joints therein;

dilating a group ofjoints to form a reservoir; and

alternately charging and discharging the group ofjoints with a fluid in order to dilate the reservoir and cause the fluid to pass into and then subsequently flow out of the reservoir.

42. The method as described in claim 41 and further including the cyclic inducement of simultaneous mechanical and thermal stress reversals on the reservoir rock causing the rock to continuously brecciate and therein exposing new reservoir rock surface.

43. The method as described in claim 41 including the step of imparting multiple stress reversals to create continuous and incremental increase in the high thermal differential surface are and reservoir volume whereby the ability to continually sweep the heat from the rock formation in a manner that allows much great efficiency removing a greater amount of heat density available per unit volume is provided.

44. The method as described in claim 41 wherein the reservoir system comprises a single discreet reservoir that is independently cycled to produce a cyclical or periodic production.

45. The method as set forth in claim 41 wherein the reservoir system includes a set of multiple independent reservoirs that could be cycled in sequence so as to produce a continuous production flow that can be steady state and/or fluctuating.

46. The method as set forth in claim 4 1 and further including a single reservoir having multiple wells serving the purpose of simultaneous injection and production in a manner that the injection wells inject periodically at a rate that exceeds the production rate on the cycle basis in order to cyclically expand the reservoir and store energy in the form of elastic string while a production well continually produces at a steady or fluctuating rate.

47. The method as set forth in claim 46 wherein the reservoir are vertically stacked while remaining independent one from the other

48. The method as set forth in claim 46 wherein the reservoir are generally horizontally arranged while remaining independently isolated one from the other.

49. The method as set forth in claim 4 1 wherein the step of charging and discharging of the system is further includes the step of timing the charging and discharging to produce a sequence of cycles with steady state load following production cycles generated while still inducing coincidental thermal mechanical cycling that results in the brecciation and spallation of the reservoir rock.

50. The method as set forth in claim 4 1 and further including drilling at least two wells wherein an injection well injects periodically at different injection rates so that the rate is greater than a continuous production rate produced from a production well such that the reservoirs alternately expanded and then allowed to contract in order to generate the combined thermal and mechanical stresses necessary to generate in situ reservoir brecciation while the reservoir is being produced at a continuous rate.

51. A method of completing geothermal production wells including the steps of

drilling a plurality of wells through a plurality of earthen formations;

utilizing a first type of drill bit through first upper earthen formations for the generation of the well bore;

utilizing a particle jet drilling bit for bore hole creation within a hot dry rock region disposed beneath the first earthen region;

terminating a first bore hole in a first Precambrian formation to a depth of sufficient temperature to allow the development of one or more discreet formation

fracture joint clouds which are oriented vertically or horizontally as determined by the rock formation;

terminating a second of the plurality of bore holes into a lower region for creating a lower fracture joint cloud generally horizontally disposed beneath the first cloud; and

hydraulically fracturing each cloud to produce a reservoir volume of dilated joints in the formation by pumping at pressures in excess of the joint dilation pressure and the formation break down pressure.

52. A method of extracting thermal energy from a rock formation, the method comprising the steps of:

drilling one or more wells to a depth sufficient to allow development of at least one reservoir comprised of fractures or joints within the rock formation;

hydraulically fracturing or dilating the natural joints in the formation through at least one of the wells;

dilating the at least one fracture or joint within the rock formation thereby forming a reservoir;

forcing cooled water under high pressure and volume into at least one of the plurality of wells to charge the reservoir and create elastic strain within the surrounding rock;

alternately opening and closing at least one set of discharge control valves and at least one set injection control valves to provide flow to and from at least one of the wells and permit alternate charging and discharging to and from the reservoir;

removing heated water from the wells;

removing at least a portion of the heat from the produced water and

using the heat produced from the heated water for thermal purposes.

53. A method of generating geothermal production wells including the steps of

drilling a plurality of wells from the surface through a plurality of earthen formations;

utilizing a first type of drilling system and method to drill through first upper sedimentary type earthen formations for the generation of the well bore;

utilizing a second type of drilling system and method for bore hole creation within a non-sedimentary region disposed beneath the first sedimentary earthen region;

terminating a first plurality of bore holes in a first Precambrian formation to a depth of sufficient temperature to allow the development of one or more discreet formation fracture joint clouds which are oriented as determined by the rock formation in situ stress fields;

terminating a second of the plurality of bore holes into a lower region for creating a lower fracture joint cloud generally horizontally disposed beneath the first cloud; and

hydraulically fracturing each cloud to produce a reservoir volume of dilated joints in the formation by pumping at pressures in excess of the joint dilation pressure and the formation break down pressure.

54. A method of drilling deep well bores from a well head into Precambrian and Hadean crystalline rock formations for accessing thermal energy therein comprising the steps of:

establishing a bore hole drilling system to drill from the surface with at least a first and a second type of drilling methodology, the first methodology including rotary-mechanical drilling or PJARMD and a second methodology including hydraulic drilling or HPJD;

drilling a first bore hole section from the surface into a first formation utilizing the first methodology of the PJARMD;

drilling a second bore hole section beneath the first bore hole section into the crystalline rock formation with the second drilling methodology of hydraulic drilling; and

exposing the thermal energy within the crystalline rock for the access thereto.

55. The method of claim 54, wherein the formation cutting uses impulse energy imparted to the formation by momentum transmitted to the entrained particles by the jetting fluid in order to abrade or crack or generally cutting the formation.

56. A method of developing a high temperature hot dry rock geothermal reservoir for accessing geothermal heat energy therein and production therefrom, the method comprising the steps of:

establishing a bore hole drilling system with at least a first and second type of drilling methodology, the first methodology including rotary-mechanical drilling or PJARMD and a second methodology including hydraulic drilling;

drilling a first bore hole section utilizing the rotary-mechanical drilling or PJAItMD;

drilling a second bore hole section beneath the first bore hole section into crystalline rock with hydraulic drilling methodology;

exposing the thermal energy within the crystalline rock for the access thereto;

fracturing the crystalline rock to form a fracture cloud with at least some of the fractures in flow communication with the second bore hole section;

pumping bore hole fluid down the first and second borehole sections to hydraulically expand the fractures; and

alternating the hydraulic expansion and contraction of the fracture cloud to generate coincidental thermal and mechanical cycling of hot dry rock formations and the periodic brecciating within the hot dry rock formation, whereby the brecciation serves the purpose of incrementally exposing new high thermal differential surfaces on an incremental basis that will serve the purpose of maintain high temperature production in the hot dry rock formation.

57. The method as described in claim 56 wherein the hydraulic expansion is effected in an omni-directional manner both during the injection cycle and the production cycle for substantially increasing the surface area swept by the working fluid.

58. A method of processing chemical reactions utilizing a reactor vessel immersed in a geothermal production well in order to allow the geothermal heat energy to initiate, sustain and/or support the conditions and or reactions within the reactor vessel in order to conduct chemical reactions.